

## **2007 Energy Summary of Committee Work**

As outlined in the September 2007 Energy Code Update Proposal, a committee consisting of representatives Steve Farrar, Guardian Industries Corp.; John Faellaci, Dow Chemical; Tom Berger, Charter Township of Orion; Larry Kaufman, DTE Energy; Tim Mrozowski, Michigan State University; Peter Derkos, Public Service Commission; Mathew Jarvi, AGC; Kelly Hunt, Pre-Manufacturer; James Renaud, AIA Michigan; Roger Papineau, Homebuilder and David Gard, Michigan Environmental Council began the process of reviewing and discussing changes to the MUEC.

During the April 22, 2008, meeting Mr. Green reviewed documents provided to the committee members which outlined background on the work to be completed and materials for use during the meetings. Mr. Green also reviewed the Request for Rulemaking for Residential Part 10 and Commercial Part 10a, the Energy Code Update Plan, which outlined the background of the code, and evaluation process including the committee structure, submission process, review process and consideration by the director. Mr. Green noted that the committee will be using the 2008 RS means rather than the 2007 version. Each committee member was provided with an ASHRAE 90.1-2004 standard and the 2006 International Energy Conservation Code. Mr. Green provided the committee with the future committee dates and asked that they review the commercial requirements and the residential matrix for discussion at the next meeting.

The bureau's website included information outlining the process for submission of proposed changes from interested parties and the public. A MUEC proposed code change form was available for the submission of proposed changes throughout the committee process.

The MUEC Part 10a for Commercial structures and the MUEC Part 10 for Residential structures were reviewed as separate rule sets. The committee discussions were based on consensus. There was agreement on enhancements to both parts of the MUEC. These enhancements included adoption of the 2006 International Energy Conservation Code, with amendments as outlined in the matrix documents.

On May 6, 2008, the committee held discussion on the Commercial Energy Code Part 10a rules.

Mr. Green clarified an inquiry from the previous meeting that the ICC IECC does allow the use of the ASHRAE standard in design documents. John Faellaci asked if the ASHRAE 90.1 could be used totally or if there was an option to use parts. Chapter 501.1 of the IECC states that the building must meet either the requirements of the ASHRAE Standard or the requirements of IECC.

The committee agreed to adopt the ICC Energy Conservation Code 2006 Edition for the Part 10a Michigan Uniform Energy Code Rules for application in commercial structures with amendments as outlined in the matrix document. Motion was carried.

The committee held discussion on the Residential Energy Code Part 10 Rules, reviewed the proposed language and drafted changes to the matrix document.

On May 20, 2008, Mr. Green provided responses and clarification to follow up questions from the May 6<sup>th</sup> meeting. There was discussion regarding placing the insulation certificate on the

electrical panel. Mr. Green checked with the bureau's Electrical Division to determine if this would be in conflict with the Electrical Laws. Clarification on placement of the certificate within the panel was added to the rule and was reflected in the matrix.

There was a question regarding whether there was a change from the previous code. The previous National code required R-8 insulation between ducts and exterior areas. The rule reflected in the matrix requires an R-8 on all duct insulation except those in floor trusses or floor cavities which would be an R-6, where before it was an R-5.

Mr. Papineau submitted two proposed code changes. The committee held discussion regarding the proposed change regarding recessed lighting. The committee determined that the wording should be revised for clarification. The change is reflected on the matrix.

The committee held discussions on Mr. Papineau's second proposed code change regarding below grade moisture control, and determined that a new section be added to address below grade walls. This change was added to the matrix. Greg Bergtold with Dow Chemical agreed to work with Mr. Green to draft language for the committee's consideration for below grade walls.

The committee made a motion to accept the matrix as revised and the motion was carried.

A motion was made by Tom Berger and supported by Larry Kaufman to accept Table R 408.31072(1) as is with no changes to be reflected in the table or the revised matrix. The motion was carried.

A motion was made by Tom Berger and supported by Tim Mrozowski to add an exception to Table 408.31073(1) to provide for glazing exceeding 20% of the above grade gross wall area to comply with Section 404 of the IECC. The motion was carried.

A motion was made by Larry Kaufman and supported by Steve Farrar to accept page 1 of the matrix with the additional amended language to be included in the revised matrix. The motion was carried.

A motion was made by Tom Berger and supported by Larry Kaufman to accept tables R 408.31072(2) & (3) of the matrix as is with no changes to be reflected in the table or the revised matrix. The motion was carried.

After discussion by the committee, a motion was made by Tom Berger and supported by John Faellaci, to accept table R 408.31073(1) of the matrix as is with no changes to be reflected in the table or the revised matrix. Mr. Papineau objected and motioned to table. Table motion failed. After further discussion by the committee, the original motion passed with opposition from Mr. Papineau and Tim Mrozowski.

On June 3, 2008, following discussion on tables 1086.3 and 1086.4 a motion was made by Tim Mrozowski and supported by Steve Farrar to adopt table 1086.4 and abbreviated report form (1086.3) as presented, with a validation of the numbers presented to assure accuracy. Mr. Papineau opposed. The motion carried.

Staff presented two sample houses to the committee for use as case studies for the proposed energy code requirements versus the existing code requirements. The information and

construction of the two sample houses in Michigan's three climate zones would be used internally by bureau staff with an energy computer simulation program known as Energy 10. Staff explained and demonstrated how the program takes basic building information and simulates energy costs savings for one design versus another.

The simulation of the model 1 and 2 story houses was presented to the committee. Discussion took place regarding the simulations. A request for new simulations to include infiltration number changes, basement R factor revisions, and utility costs with varied inflation rates applied to the calculations to determine if the 7 year payback time period can be reached with the modifications.

Staff presented the energy computer simulations for the two sample houses for the proposed code versus the current code in Michigan's three climate zones. The simulations demonstrated annual energy savings and calculated a simple payback based on the first year savings and added energy cost escalations. Cost estimates for the sample houses (based on 2007 R.S. Means Construction Cost Data) were also presented.

On June 24, 2008, staff presented a revised cost estimates for the sample houses that took basement insulation requirements of the current code into account. The revised insulation quantities were included in the energy code computer simulations in the Energy 10 program. Discounted payback calculations were made for the two sample houses showing escalated energy costs.

The next step is to submit the rules along with supporting documentation to the department for review.